

## United States Department of Agriculture Natural Resources Conservation Service

### Ecological Site Description

**Site Type:** Rangeland

**Site Name:** Saline Lowland (SL) 15-19" Black Hills Precipitation Zone,

**Site ID:** 061XY138WY

**Major Land Resource Area:** 61 – Black Hills Foot Slopes

### Physiographic Features

This site normally occurs on land that receives overflow from intermittent streams or runoff from adjacent slopes.

**Landform:** alluvial fans, drainage ways & stream terraces

**Aspect:** N/A

	<u>Minimum</u>	<u>Maximum</u>
<b>Elevation (feet):</b>	3500	5000
<b>Slope (percent):</b>	0	6
<b>Water Table Depth (inches):</b>	None within 60 inches	
<b>Flooding:</b>		
<b>Frequency:</b>	None	None
<b>Duration:</b>	None	None
<b>Ponding:</b>		
<b>Depth (inches):</b>	0	0
<b>Frequency:</b>	None	None
<b>Duration:</b>	None	None
<b>Runoff Class:</b>	negligible	low

### Climatic features

Annual precipitation ranges from 15-19 inches per year. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation. Temperatures show a wide range between summer and winter and between daily maximums and minimums. This is predominantly due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

Strong winds are less frequent than over other areas of Wyoming. Occasional storms, however, can bring brief periods of high winds with gusts exceeding 50 mph.

Growth of native cool season plants begins about April 1 and continues to about July 1. Native warm season plants begin about May 15 and continue to about August 15. Fall green-up may occur in September and last through October.

The following information is from the "Devils Tower 2" climate station:

Site Type: Rangeland  
MLRA: 61 – Black Hills Foot Slopes

Saline Lowland 15-19" P.Z.  
R061XY138WY

	<u>Minimum</u>	<u>Maximum</u>	<u>5 yrs. out of 10 between</u>
<b>Frost-free period (days) (32°F):</b>	58	93	June 6 – September 7
<b>Freeze-free period (days) (28°F):</b>	95	125	May 18 – September 20
<b>Annual Precipitation (inches):</b>	14.81	20.17	

Mean annual precipitation: 17.66 inches

Mean annual air temperature: 44.4°F (28.6°F Avg. Min. to 60.1°F Avg. Max.)

For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at <http://www.wcc.nrcs.usda.gov/> website. Other climate station(s) representative of this precipitation zone include "Hulett" and "Sundance".

## Influencing Water Features

<b>Wetland Description:</b>	<u><b>System</b></u>	<u><b>Subsystem</b></u>	<u><b>Class</b></u>	<u><b>Sub-class</b></u>
None	None	None	None	None

**Stream Type:** C  
(Rosgen Type)

## Representative Soil Features

The soils of this site are deep and very deep well-drained soils formed in alluvium. Layers of the soil most influential to the plant community vary from 3 to 6 inches thick. These soils have moderate to slow permeability and are moderately to strongly saline and/or alkaline. Higher soluble salt concentrations may be found in the subsoil. The surface soil will be highly variable and vary from 2 to 8 inches in thickness.

**Parent Material Kind:** alluvium

**Parent Material Origin:** sandstone, shale

**Surface Texture:** loam, clay loam, silt loam, clay

**Surface Texture Modifier:** none

**Subsurface Texture Group:** loam

**Surface Fragments ≤ 3" (% Cover):** 0

**Surface Fragments > 3" (%Cover):** 0

**Subsurface Fragments ≤ 3" (% Volume):** 0

**Subsurface Fragments > 3" (% Volume):** 0

	<u><b>Minimum</b></u>	<u><b>Maximum</b></u>
<b>Drainage Class:</b>	poorly	excessive
<b>Permeability Class:</b>	moderate	rapid
<b>Depth (inches):</b>	20	>60
<b>Electrical Conductivity (mmhos/cm) ≤20":</b>	4	16
<b>Sodium Absorption Ratio ≤20":</b>	5	13
<b>Soil Reaction (1:1 Water) ≤20":</b>	6.6	9.0
<b>Soil Reaction (0.1M CaCl2) ≤20":</b>	NA	NA
<b>Available Water Capacity (inches) ≤30":</b>	1	6.2
<b>Calcium Carbonate Equivalent (percent) ≤20":</b>	0	10

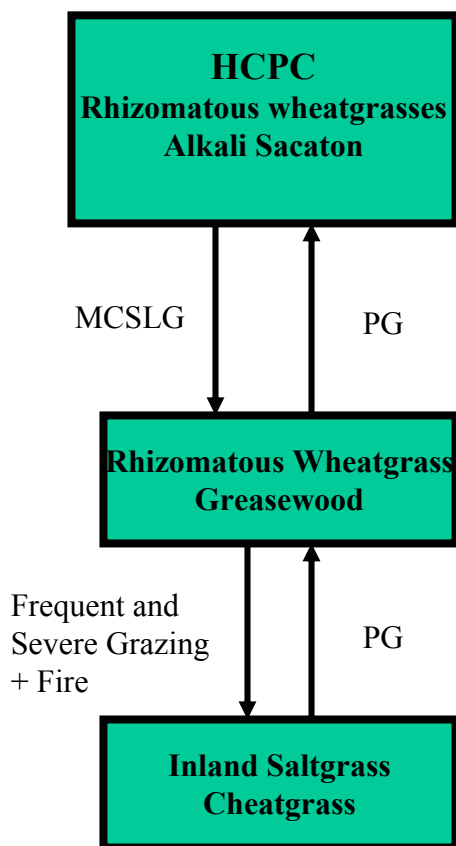
## **Plant Communities**

### **Ecological Dynamics of the Site:**

As this site deteriorates, species such as inland saltgrass and greasewood increase, and cheatgrass invades the site. Grasses such as alkali sacaton, rhizomatous wheatgrasses, and Nuttall's alkaligrass will decrease in frequency and production.

The Historic Climax Plant Community (description follows the plant community diagram) has been determined by study of rangeland relic areas, or areas protected from excessive disturbance. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures, and historical accounts have also been used.

The following is a State and Transition Model Diagram that illustrates the common plant communities (states) that can occur on the site and the transitions between these communities. The ecological processes will be discussed in more detail in the plant community narratives following the diagram.



**BM** - Brush Management (fire, chemical, mechanical)

**Freq. & Severe Grazing** - Frequent and Severe Utilization of the Cool-season Mid-grasses during the Growing Season

**GLMT** - Grazing Land Mechanical Treatment

**LTPG** - Long-term Prescribed Grazing

**MCSLG** - Moderate, Continuous Season-long Grazing

**NU, NF** - No Use and No Fire

**PG** - Prescribed Grazing (proper stocking rates with adequate recovery periods during the growing season)

**VLTPG** - Very Long-term Prescribed Grazing (could possibly take generations)

**Na** - Moderate Sodium in Soil

**Plant Community Composition and Group Annual Production**  
**Reference Plant Community (HCPC)**

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Total: 2900		
			Group	lbs./acre	% Comp.
<b>GRASSES AND GRASS-LIKES</b>					
<b>GRASSES/GRASSLIKES</b>					
Alkali sacaton	Sporobolus airoides	SPAI	1	725 - 1160	25 - 40
Western wheatgrass	Pascopyrum smithii	PASM	2	435 - 725	15 - 25
Inland saltgrass	Distichlis spicata	DISP	3	145 - 290	5 - 10
Nuttall's alkaligrass	Puccinellia nuttalliana	PUNU2	4	0 - 290	0 - 10
Alkali bluegrass	Poa juncifolius (syn. Poa secunda)	POSE	5	0 - 145	0 - 5
other perennial grasses (native)		2GP	6	0 - 145	0 - 5
<b>FORBS</b>			<b>7</b>	<b>0 - 145</b>	<b>0 - 5</b>
Twogrooved milkvetch	Astragalus bisulcatus	ASBI2	7	0 - 145	0 - 5
other perennial forbs (native)		2FP	7	0 - 145	0 - 5
<b>TREES/SHRUBS</b>					
Greasewood	Sarcobatus vermiculatus	SAVE4	8	145 - 290	5 - 10
Cottonwood	Populus angustifolia	POAN3	9	0 - 145	0 - 5
Rabbitbrush	Chrysothamnus spp.	CHRY9	10	0 - 145	0 - 5
other shrubs & half shrubs (native)		2SHRUB	11	0 - 145	0 - 5

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors.

## Plant Community Narratives

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility, but they probably are the most prevalent and repeatable plant communities. The plant composition tables shown above have been developed from the best available knowledge at the time of this revision. As more data is collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as “Desired Plant Communities”. According to the USDA NRCS National Range and Pasture Handbook, Desired Plant Communities (DPC’s) will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

### Rhizomatous wheatgrasses/ Alkali sacaton Plant Community

The interpretive plant community for this site is the Historic Climax Plant Community (HCPC). This state evolved with grazing by large herbivores and is well suited for grazing by domestic livestock. Potential vegetation is about 80% grasses or grass-like plants, 5% forbs and 15% woody plants. Saline tolerant grasses dominate the state. The major grasses include rhizomatous wheatgrasses, alkali sacaton, Nuttall’s alkaligrass, and inland saltgrass. Woody plants are greasewood, rubber rabbitbrush, and cottonwoods.

The total annual production (air-dry weight) of this state is about 2900 pounds per acre, but it can range from about 1900 lbs/acre in unfavorable years to about 3500 lbs/acre in above average years.

The following is the growth curve of this plant community expected during a normal year:

Growth curve number: WY1602

Growth curve name: 15-19BL, Extra Water Sites

Growth curve description: Extra Water Sites

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	25	20	10	15	5	0	0

(Monthly percentages of total annual growth)

This state is stable and well adapted to the Black Hills Foot Slopes climatic conditions. The diversity in plant species allows for high drought resistance. This is a sustainable plant community (site/soil stability, watershed function, and biologic integrity).

Transitions or pathways leading to other plant communities are as follows:

- Moderate, continuous season-long grazing will convert this plant community to the *Rhizomatous wheatgrasses/Greasewood Plant Community*.
- Frequent and Severe grazing and fire will convert this plant community to the *Inland saltgrass/Cheatgrass Plant Community*.

### Rhizomatous wheatgrasses/Greasewood Plant Community

This plant community evolved under moderate grazing by domestic livestock. Saline resistant grasses make up the majority of the understory. Greasewood and rubber rabbitbrush have increased on the state. Dominant grasses include rhizomatous wheatgrasses, inland saltgrass, and alkali sacaton. Forbs, commonly found in this plant community, include Louisiana sagewort (cudweed), plains wallflower, hairy goldaster, and Pursh seepweed. Greasewood canopy cover may be 20-40%. When compared to the Historical Climax Plant Community, rhizomatous wheatgrasses and alkali sacaton have decreased, inland saltgrass, greasewood, and rubber rabbitbrush have increased. The

overstory of greasewood and understory of grass and forbs provide a diverse plant community that will support domestic livestock and wildlife such as birds, mule deer and antelope.

The total annual production (air-dry weight) of this state is about 1500 pounds per acre, but it can range from about 1000 lbs/acre in unfavorable years to about 2000 lbs/acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number: WY1602  
Growth curve name: 15-19BL, Extra Water Sites  
Growth curve description: Extra Water Sites

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	25	20	10	15	5	0	0

(Monthly percentages of total annual growth)

This state is stable and protected from excessive erosion. The biotic integrity of this plant community is usually intact. The watershed is usually functioning.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing over the long-term will result in a plant community very similar to the *Historic Climax Plant Community*, except that greasewood will persist.
- Frequent and Severe grazing with Fire will convert this plant community to the *Inland saltgrass/Cheatgrass Plant Community*.

#### **Inland Saltgrass/Cheatgrass Plant Community**

This plant community is the result of long-term improper grazing and fire. Inland saltgrass, cheatgrass, and alkali bluegrass dominate this state. Bare ground has increased, and production has decreased.

The total annual production (air-dry weight) of this state is about 1200 pounds per acre, but it can range from about 800 lbs/acre in unfavorable years to about 1600 lbs/acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number: WY1602  
Growth curve name: 15-19BL, Extra Water Sites  
Growth curve description: Extra Water Sites

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	25	20	10	15	5	0	0

(Monthly percentages of total annual growth)

The soil of this state is not well protected. The biotic integrity is compromised by cheatgrass and bare ground. The watershed is functioning but may produce excessive runoff.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing over the long-term will return this state to near *Historic Climax Plant Community*.

## Ecological Site Interpretations

### Animal Community – Wildlife Interpretations

**Historic Climax Plant Community:** The predominance of grasses in this plant community favors grazers and mixed-feeders, such as bison, elk, and antelope. Suitable thermal and escape cover for deer may be limited due to the low quantities of woody plants. However, topographical variations could provide some escape cover. When found adjacent to sagebrush dominated states, this plant community may provide brood rearing/foraging areas for sage grouse, as well as lek sites. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles. Many grassland obligate small mammals would occur here.

**Rhizomatous wheatgrasses/greasewood:** This plant community exhibits a low level of plant species diversity due to the accumulation of salts in the soil. It may provide some thermal and escape cover for deer and antelope if no other woody community is nearby, but in most cases it is not a desirable plant community to select as a wildlife habitat management objective.

**Inland saltgrass/Cheatgrass:** This plant community may be useful for the same large grazers that would use the Historic Climax Plant Community. However, the plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals. It may provide some foraging opportunities for sage grouse when it occurs proximal to woody cover.



Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 61, 15-19 inch Black Hills

COMMON NAME/	SCIENTIFIC NAME	SCI. SYMBOL	Cattle	Sheep	Horses	Mule Deer	Antelope
<b>GRASSES/GRASSLIKES</b>							
alkali bluegrass	<i>Poa secunda</i> ssp. <i>juncifolia</i>	POSEJ	DDDD	PPPP	DDDD	PPPP	PPPP
alkali cordgrass	<i>Spartina gracilis</i>	SPGR	DDDD	UUUU	DDDD	UUUU	UUUU
alkali sacaton	<i>Sporobolus airoides</i>	SPA1	PPPP	DDDD	PPPP	DDDD	DDDD
bearded wheatgrass	<i>Elymus caninus</i>	ELCA	PPPP	DDDD	PPPP	DDDD	DDDD
Big bluegrass	<i>Poa ampla</i> (syn. <i>To Poa secunda</i> )	POAM (POSE)	PPPP	PPPP	PPPP	PPPP	PPPP
big bluestem	<i>Andropogon gerardii</i>	ANGE	PPPP	PPPP	PPPP	DDDD	DDDD
blue grama	<i>Bouteloua gracilis</i>	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD
Blue wildrye	<i>Elymus glaucus</i>	ELGL	DDDD	DDDD	DDDD	DDDD	DDDD
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	PSSP6	PPPP	PPPP	PPPP	DDDD	DDDD
bluejoint reedgrass	<i>Calamagrostis canadensis</i>	CACA4	PPPP	DDDD	PPPP	UUUU	UUUU
buffalograss	<i>Buchloe dactyloides</i>	BUDA	DDDD	DDDD	DDDD	DDDD	DDDD
Canada wildrye	<i>Elymus canadensis</i>	ELCA4	PPPP	PPPP	PPPP	DDDD	DDDD
Canby bluegrass	<i>Poa canbyi</i> (syn. <i>to Poa secunda</i> )	POCA (POSE)	PPPP	PPPP	PPPP	PPPP	PPPP
Columbia needlegrass	<i>Achnatherum nelsonii</i>	ACNE9	PPPP	PPPP	DDDD	DDDD	DDDD
Cusick's bluegrass	<i>Poa cusickii</i>	POCU3	PPPP	PPPP	PPPP	PPPP	PPPP
fowl bluegrass	<i>Poa palustris</i>	POPA2	DDDD	DDDD	DDDD	UUUU	UUUU
green needlegrass	<i>Nassella viridula</i>	NAV14	PPPP	PPPP	PPPP	PPPP	PPPP
hairy grama	<i>Bouteloua hirsuta</i>	BOH12	DDDD	DDDD	DDDD	DDDD	DDDD
Indian ricegrass	<i>Achnatherum hymenoides</i>	ACHY	PPPP	PPPP	PPPP	PPPP	PPPP
inland saltgrass	<i>Distichlis spicata</i>	DISP	UUUU	UUUU	UUUU	UUUU	UUUU
inland sedge	<i>Carex interior</i>	CAIN11	DDDD	DDDD	DDDD	UUUU	UUUU
little bluestem	<i>Schizachyrium scoparium</i>	SCSC	PPPP	PPPP	PPPP	DDDD	DDDD
mat muhly	<i>Muhlenbergia richardsonis</i>	MURI	UUUU	UUUU	UUUU	UUUU	UUUU
Nebraska sedge	<i>Carex nebraskensis</i>	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD
needleandthread	<i>Hesperostipa comata</i>	HECO26	PPPP	PPPP	PPPP	PPPP	PPPP
needleleaf sedge	<i>Carex duriuscula</i>	CADU6	UUUU	UUUU	UUUU	UUUU	UUUU
northern reedgrass	<i>Calamagrostis stricta</i>	CAST13	PPPP	DDDD	PPPP	UUUU	UUUU
Nuttall's alkaligrass	<i>Puccinellia nuttalliana</i>	PUNU2	PPPP	PPPP	PPPP	PPPP	PPPP
plains reedgrass	<i>Calamagrostis montanensis</i>	CAMO	DDDD	DDDD	DDDD	DDDD	DDDD
prairie cordgrass	<i>Spartina pectinata</i>	SPPE	PPPP	DDDD	PPPP	UUUU	UUUU
prairie junegrass	<i>Koeleria macrantha</i>	KOMA	DDDD	DDDD	DDDD	DDDD	DDDD
prairie sandreed	<i>Calamovilfa longifolia</i>	CALO	PPPP	DDDD	PPPP	UUUU	UUUU
Pumpelly brome	<i>Bromus inermis</i> spp. <i>pumellianus</i>	BRIMP5	PPPP	PPPP	DDDD	DDDD	UUUU
Richardson's needlegrass	<i>Achnatherum richardsonii</i>	ACRI8	PPPP	DDDD	DDDD	DDDD	DDDD
sand bluestem	<i>Andropogon halli</i>	ANHA	PPPP	DDDD	PPPP	UUUU	UUUU
sand dropseed	<i>Sporobolus cryptandrus</i>	SPCR	DDDD	DDDD	DDDD	UUUU	UUUU
Sandberg bluegrass	<i>Poa secunda</i>	POSE	DDDD	DDDD	DDDD	DDDD	DDDD
sideoats grama	<i>Bouteloua curtipendula</i>	BOCU	PPPP	PPPP	PPPP	DDDD	UUUU
slender wheatgrass	<i>Elymus trachycaulus</i>	ELTR7	PPPP	DDDD	PPPP	DDDD	DDDD
spike oatgrass	<i>Helictotrichon hookeri</i>	HEHO8	PPPP	DDDD	PPPP	DDDD	DDDD
spike sedge	<i>Carex nardina</i>	CANA2	DDDD	DDDD	DDDD	UUUU	UUUU
Spikescue	<i>Leucopoa kingii</i>	LEK12	PPPP	DDDD	PPPP	PPPP	DDDD
stonehills (plains) muhly	<i>Muhlenbergia cuspidata</i>	MUCU3	UUUU	UUUU	UUUU	UUUU	UUUU
switchgrass	<i>Panicum virgatum</i>	PAV12	UDPD	UDDU	UDPD	UUUU	UUUU
thickspike wheatgrass	<i>Elymus lanceolatus</i>	ELLAL	DDDD	DDDD	DDDD	DDDD	DDDD
threadleaf sedge	<i>Carex filifolia</i>	CAFI	DDDD	DDDD	DDDD	DDDD	PPPP
threeawn	<i>Aristida</i> spp.	ARIST	NNNN	NNNN	NNNN	NNNN	NNNN
Timber oatgrass (danthonia)	<i>Danthonia intermedia</i>	DAIN	DDDD	DDDD	DDDD	UUUU	UUUU
tufted hairgrass	<i>Deschampsia caespitosa</i>	DECA18	PPPP	PPPP	PPPP	DDDD	DDDD
western wheatgrass	<i>Pascopyrum smithii</i>	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
<b>FORBS</b>							
alkali (purs) seepweed	<i>Suaeda calceoliformis</i>	SUCA2	NNNN	NNNN	NNNN	NNNN	NNNN
American licorice	<i>Glycyrrhiza lepidota</i>	GLLE3	UUUU	UUUU	UUUU	UUUU	UUUU
American vetch	<i>Vicia americana</i>	VIAM	PPPP	PPPP	PPPP	PPPP	PPPP
arrowgrass	<i>Triglochin</i> spp.	TRIGL	T	T	T	T	T
biscuitroots	<i>Lomatium</i> spp.	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD
bluebells	<i>Mertensia</i>	MERTE	DDDD	PPPP	DDDD	DDDD	DDDD
blue-eyed grass	<i>Sisyrinchium</i> spp.	SISYR	DDDD	PPPP	DDDD	DDDD	DDDD
breadroot scurflpea	<i>Pediomelum esculentum</i>	PEES	DDDD	DDDD	DDDD	DDDD	DDDD
cattail, broad-leaf	<i>Typha latifolia</i>	TYLA	DDDD	UUUU	DDDD	UUUU	UUUU
cattail, narrow-leaf	<i>Typha angustifolia</i>	TYAN	DDDD	UUUU	DDDD	UUUU	UUUU
common comandra (toadflax)	<i>Comandra umbellata</i>	COUMP	UUUU	UUUU	UUUU	UUUU	UUUU
cutweed sawewort	<i>Artemisia ludoviciana</i>	ARLU	UUUU	UUUU	UUUU	UUUU	UUUU
deathcamas	<i>Zigadenus venenosus</i>	ZIVE	TTTT	TTTT	TTTT	TTTT	TTTT
dotted gayfeather	<i>Liatris punctata</i>	LIPU	UPPU	UPPU	UPPU	UPPU	UPPU
erigeron (fleabanes)	<i>Erigeron</i> spp.	ERIGE2	UUUU	UUUU	UUUU	UUUU	UUUU
erigonum (buckwheat)	<i>Eriogonum</i> spp.	ERIOG	UUUU	DDDD	UUUU	UUUU	UUUU
fringed sawewort	<i>Artemisia frigida</i>	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU
goldenrod	<i>Oligoneuron</i>	OLIGO3	UUUU	UUUU	UUUU	UUUU	UUUU
green sawewort	<i>Artemisia dracuncul</i>	ARDR4	UUUU	UUUU	UUUU	UUUU	UUUU
gromwell	<i>Buglossoides arvensis</i>	BUAR3	UUUU	UUUU	UUUU	UUUU	UUUU
groundsel	<i>Tephrosia</i>	TEPHR3	UUUU	UUUU	UUUU	UUUU	UUUU
hawksbeard	<i>Crepis acuminata</i>	CRAC2	UUUU	PPPP	UUUU	DDDD	DDDD
horsetails	<i>Equisetum</i> spp.	EQUIS	UUUU	UUUU	UUUU	UUUU	UUUU
iris	<i>Iris</i> spp.	IRIS	UUUU	UUUU	UUUU	UUUU	UUUU
mountain thermopsis	<i>Thermopsis divaricarpa</i>	THDI4	UUUU	UUUU	UUUU	UUUU	UUUU
Nailworts	<i>Paronychia</i> spp.	PARON	UUUU	UUUU	UUUU	UUUU	UUUU
penstemons	<i>Penstemon</i> spp.	PENST	PPPP	PPPP	PPPP	PPPP	PPPP
prairie coneflower	<i>Ratibida columnifera</i>	RACO3	DDDD	PPPP	DDDD	PPPP	PPPP
prairie clovers	<i>Dalea</i> spp.	DALEA	UPPU	UPPU	UPPU	UPPU	UPPU
scurflpeas	<i>Psoraleidum</i> spp.	PSORA2	NNNN	UUUU	NNNN	UUUU	UUUU
starwort	<i>Callitriche</i> spp.	CALL16	UUUU	UUUU	UUUU	UUUU	UUUU
stonecrop	<i>Sedum</i> spp.	SEDUM	UUUU	UUUU	UUUU	UUUU	UUUU
twogrooved milkvetch	<i>Astragalus bisulcatus</i>	ASBI2	T	T	T	T	T
violets	<i>Viola</i> spp.	VIOLA	DDDD	DDDD	DDDD	DDDD	DDDD
water hemlocks	<i>Cicuta</i> spp.	CICUT	T	T	T	T	T
western virginsbower	<i>Clematis occidentalis</i>	CLOC2	UUUU	DDDD	UUUU	DDDD	DDDD
western wallflower	<i>Erysimum capitatum</i>	ERCAC	DDDD	DDDD	DDDD	DDDD	DDDD
western yarrow	<i>Achillea lanulosa</i>	ACHIL	UUUU	UUUU	UUUU	UUUU	UUUU
wild onion	<i>Allium textile</i>	ALTE	DDDD	DDDD	DDDD	DDDD	DDDD
<b>TREES, SHRUBS &amp; HALF-SHRUBS</b>							
big sagebrush	<i>Artemisia tridentata</i>	ARTR2	UUUU	DDDD	UUUU	DDDD	DDDD
black greasewood	<i>Sarcobatus vermiculatus</i>	SAVE4	DDDD	DDDD	UUUU	DDDD	DDDD
green rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	CHVI8	DDDD	DDDD	DDDD	DDDD	DDDD
plains cottonwood (sprouts)	<i>Populus deltoides</i>	PODEM	DDDD	DDDD	DDDD	DDDD	DDDD
rubber rabbitbrush	<i>Encarnia nauseosa</i>	ERNA10	UUUU	DDDD	UUUU	DDDD	DDDD
silver sagebrush	<i>Artemisia cana</i>	ARCA5	DDDD	DDDD	DDDD	PPPP	PPPP
skunkbush sumac	<i>Rhus trilobata</i>	RHTR	DDDD	DDDD	DDDD	DDDD	DDDD
western snowberry	<i>Symphoricarpos occidentalis</i>	SYOC	UUUU	UUUU	UUUU	DDDD	UUUU
wildrose	<i>Rosa woodsii</i> var. <i>woodsii</i>	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD
willows	<i>Salix</i> L.	SALIX	PPPP	PPPP	DDDD	PPPP	UUUU
winterfat	<i>Krascheninnikovia lanata</i>	KRLA2	PPPP	PPPP	PPPP	PPPP	PPPP
yucca	<i>Yucca glauca</i>	YUGL	DDDD	DDDD	DDDD	DDDD	DDDD

N = not used; U = undesirable; D = desirable; P = preferred; T = toxic

## Animal Community – Grazing Interpretations

The following table lists suggested stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity. If distribution problems occur, stocking rates must be reduced to maintain plant health and vigor.

Plant Community	Production (Lbs/acre)	Carrying Capacity* (AUM/ac)
Historic Climax Plant Community	1900-3500	0.6
Rhizomatous wheatgrasses/greasewood	1000-2000	0.5
Inland saltgrass/Cheatgrass	800-1600	0.25

\* - Continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

## Hydrology Functions

Water is the principal factor limiting forage production on this site. This site is dominated by soils in hydrologic group B and C, with localized areas in hydrologic group D. Infiltration ranges from moderate to rapid. Runoff potential for this site varies from moderate to high depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for high infiltration and lower runoff. An example of an exception would be where short-grasses form a strong sod and dominate the site. Areas where ground cover is less than 50% have the greatest potential to have reduced infiltration and higher runoff (refer to Part 630, NRCS National Engineering Handbook for detailed hydrology information).

Rills and gullies should not typically be present. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses. Litter typically falls in place, and signs of movement are not common. Chemical and physical crusts may be present. Cryptogamic crusts are present, but only cover 1-2% of the soil surface.

## Recreational Uses

This site provides hunting opportunities for upland game species. The wide variety of plants which bloom from spring until fall have an esthetic value that appeals to visitors.

## Wood Products

No appreciable wood products are present on the site.

Site Type: Rangeland  
MLRA: 61 – Black Hills Foot Slopes

Saline Lowland 15-19" P.Z.  
R061XY138WY

## Other Products

None noted.

## Supporting Information

### Associated Sites

Overflow	061XY130WY
Lowland	061XY128WY

### Similar Sites

(058BY238WY) – Saline Lowland 15-17" Northern Plains P.Z. has lower production.

### Inventory Data References (narrative)

Information presented here has been derived from NRCS clipping data and other inventory data. Field observations from range trained personnel were also used. Other sources used as references include: USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, and USDA NRCS Soil Surveys from various counties.

### Inventory Data References

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
SCS-RANGE-417		1971-1994	WY	Weston & others
Ocular estimates		1990-1999	WY	Weston & others

### State Correlation

This site occurs entirely within Wyoming.

### Type Locality

### Field Offices

Newcastle, Sundance

### Relationship to Other Established Classifications

### Other References

### Site Description Approval

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State Range Management Specialist

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Date

## Ecological Reference Worksheet

**Author(s)/participant(s):** \_\_\_\_\_  
**Contact for lead author:** \_\_\_\_\_ **Reference site used? Yes/No**  
**Date:** 4/05 **MLRA:** 61 **Ecological Site:** R061XY138WY Saline Lowland (SL) 15-19"BL  
 This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

**Indicators.** For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for **each** community within the reference state, when appropriate & (3) cite data. Continue descriptions on separate sheet.

**1. Number and extent of rills:** Rills should not be present

**2. Presence of water flow patterns:** Barely observable

**3. Number and height of erosional pedestals or terracettes:** Essentially non-existent

**4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are *not* bare ground):** Bare ground is 10-20% occurring in small areas throughout site

**5. Number of gullies and erosion associated with gullies:** Active gullies should not be present

**6. Extent of wind scoured, blowouts and/or depositional areas:** None

**7. Amount of litter movement (describe size and distance expected to travel):** Little to no plant litter movement. Plant litter remains in place and is not moved by erosional forces.

**8. Soil surface (top few mm) resistance to erosion (stability values are averages – most sites will show a range of values for both plant canopy and interspaces, if different):** Plant cover and litter is at 80% or greater of soil surface and maintains soil surface integrity. Soil Stability class is anticipated to be 4 or greater.

**9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different):** Use Soil Series description for depth and color of A-horizon

**10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:** Grass canopy and basal cover should reduce raindrop impact and slow overland flow providing increased time for infiltration to occur. Healthy deep rooted native grasses enhance infiltration and reduce runoff. Infiltration is Moderate.

**11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** No compaction layer or soil surface crusting should be present.

**12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: >>, >, = to indicate much greater than, greater than, and equal to):** Mid stature Grasses > Shrubs > Short stature Grasses > Forbs

**13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Very Low

**14. Average percent litter cover and depth :** Average litter cover is 30-40% with depths of 0.25 to 1.0 inches

**15. Expected annual production (this is all above-ground production, not just forage production):**  
2900 lbs/ac

**16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, “can, and often do, continue to increase regardless of the management of the site and may eventually dominate the site”:** Greasewood, Inland saltgrass Cheatgrass, Rubber rabbitbrush and Species found on Noxious Weed List

**17. Perennial plant reproductive capability:** All species are capable of reproducing